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199-2106 (FGT 1357 PA)

REMARKS

Claims 1-18 are currently pending in the Office Action. Claims 1-14 were provisionally elected with traverse on January 7, 2003. Claims 15-18 were therefore withdrawn as being drawn to a non-elected invention. Affirmation of this election is noted herein.

In the enclosed Office Action, the Examiner has objected to the drawings for reasons stated in Paragraphs 4-7 of the Office Action.

The Specification also stands objected to for various informalities listed in Paragraphs 8 and 9 of the Office Action.

Claims 1-14 stand rejected under 35 U.S.C. §112, first paragraph, for reasons listed in Paragraph 10 of the Office Action.

Claims 1-3 and 7 stand rejected under 35 U.S.C. §102(b) as being anticipated by Furaya et al. (JP 06-111838).

Claims 6, 8-10, 13 and 14 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Furaya et al. (JP 06-111838).

Claims 4, 5, 11 and 12 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Furaya et al. (JP 06-111838) in view of Cornelison et al. (U.S. Patent No. 4,829,655)

These objections and rejections will be addressed as set forth below:

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Drawings

In response to the Examiner's objection listed in Paragraph 4 of the Office Action, Applicants have amended Figure 5 and the specification, beginning on Page 16, to indicate that the burner gas outlet port is 310a, the serial flow reformer is 325, and the parallel flow reformer is 350.

Regarding Paragraph 5, Applicants have corrected the drawings to include feed gas outlet port 205b and interleaved sheet 313a. Applicants have also corrected the specification to list the first header sheet as 311, not 311a, to comply with Figure 5. Applicants have also corrected page 10, line 24 to read "interleaved sheet 313", not "next adjacent interleaved sheet 313".

Applicants have also reviewed the specification and drawings and made additional corrections to comply with 37 C.F.R. 1.84(p) to clearly the invention. These include the addition of reference numerals 102b, 102f, 102l, 102r, 102z, 120b, 120f, and 120f to Figure 3 and the correction of the specification on page 10, lines 25-31 to include bottom sheet 102z (to differentiate it from other header sheets 102) and next adjacent burner section 105b (to differentiate it from outlet port 105).

Applicants believe that the Examiner's objections are overcome. Reconsideration of the drawings in lieu of these changes is respectfully requested.

Specification

The specification is objected to for various informalities listed in Paragraph 8 of the Office Action. The Applicants have amended the specification to correct these various informalities as suggested by the Examiner on pages 7 and 12. Reconsideration of these amended paragraphs is respectfully requested.

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Claim Rejections, 35 U.S.C. §112, Second Paragraph

The claims are objected to for various informalities listed in Paragraph 10 of the Office Action. The Applicants have amended claims 1 and 8 per the Examiner's suggestions to correct these various informalities. Applicants have also cancelled claim 12 without prejudice. Reconsideration of the claims in lieu of these amendments is respectfully requested.

The Claim Rejections, 35 U.S.C. §102(b) and 103(a) to Fuyura et al.

Claims 1-3 and 7 stand rejected under 35 U.S.C. §102(b) as being anticipated by Furuya et al. (JP 06-111838), while claims 6, 8-10, 13 and 14 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Furuya et al. (JP 06-111838). Applicants respectfully traverse the Examiner's rejection.

In making this rejection, the Examiner notes on Page 7 of the Office Action that "reformer sections 56 having a substantially perpendicular flow to burner sections 56, 58". This statement incorrectly characterizes what is described in paragraph [0065] and Figure 12 of the Fuyura invention. Figure 12 and paragraph [0065] are directed towards the solid oxide fuel cell, in which hydrogen is converted to electricity.

The present invention, on the other hand, creates a serial cross flow geometry in the reformer, not the fuel cell, to convert feed gas to hydrogen.

Thus, Fuyura et al. does not disclose a reformer, used to convert feed gas to hydrogen, having serial cross flow geometry. As such, Fuyura does not anticipate, nor render obvious, the present invention. Reconsideration of claims 1-3, 6-10 and 13-14 is respectfully requested.

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The Claim Rejections, 35 U.S.C. § 103(a) to Fuyura et al. in view of Cornelison et al.

Claims 4, 5, 11 and 12 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Furuya et al. (JP 06-111838) in view of Cornelison et al. (U.S. Patent No. 4,829,655). Applicants respectfully traverse the Examiner's rejection.

As stated previously, claim 12 has been cancelled without prejudice. As such, the rejection of claim 12 is moot.

As the Examiner states on Pages 10-11 of the Office Action, Cornelison et al., describes thermally conductive materials that the Examiner believes can be used the structure of Fukura et al. to describe the presently claimed invention. However, Cornelison does not disclose a reformer having serial cross flow as in the presently claimed invention. Further, as stated above, Fuyura et al. similarly does not disclose the use of serial cross flow in a reformer used to convert feed gas to hydrogen. As such, the combination of Fuyura et al. and Cornelison et al. does not describe a reformer having serial cross flow geometry used to convert feed gas to hydrogen. Hence, the combination of Fuyura et al. and Cornelison et al. cannot render claims 4, 5 and 11 obvious. Reconsideration of claims 4, 5 and 11 is respectfully requested.

Conclusion

In view of the foregoing amendments and remarks, the Applicants submit that claims 1-11 and 13-14 are all in proper form and patentably distinguish from the prior art. Accordingly, allowance of the claim and passage of the application to issuance is respectfully requested.

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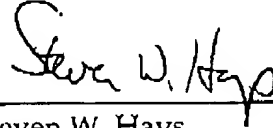
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The Examiner is invited to telephone the Applicants' undersigned attorney at (248) 223-9500 if any matters remain unresolved.

Respectfully submitted,

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